What is claimed is:

1. A substrate, in particular a substrate with at least one self-cleaning surface, the substrate comprising a coating of glass, ceramic, plastic and metal, or a glazed or enamelled substrate, where the coating comprises particles which form a surface structure that is at least partly superficially hydrophobic, wherein, the structure-forming particles have an average diameter of less than 100 nm.

2. A substrate with a self-cleaning surface as defined in claim 1, wherein the structure-forming particles have an average diameter of less than 50 nm and at least 5 nm.

3. A substrate with a self-cleaning surface as defined in claim 1, wherein the structure-forming particles are chosen from the series consisting of metal oxides, mixed oxides, silicates, sulfates, phosphates, borates, carbon blacks, metal powders, metal sulfides, selenides, sulfoselenides and oxosulfides, metal nitrides and oxide-nitrides and organic polymers.

4. A substrate with a self-cleaning surface as defined in claim 1, wherein the structure-forming particles are metal oxides from the series consisting of SiO_2, TiO_2, Al_2O_3, ZrO_2 and SnO_2, in particular pyrogenically prepared oxides thereof.

5. A substrate with a self-cleaning surface as defined in claim 1, wherein the coating comprises the structure-forming particles bonded in or by means of an inorganic or organic layer-forming material.

6. A substrate with a self-cleaning surface as defined in claim 5, where the layer-forming material is a glass or a material which forms Me-O-Me' structural elements, wherein Me and Me' are identical or different and represent B, Si, Al, P, Ti, Sn or Zr.

7. A substrate with a self-cleaning surface as defined in claim 5, where in addition to the structure-forming particles with an average diameter of less than 100 nm, in particular less than 50 nm, the layer according to the invention or a layer applied underneath with a micro-scale surface structure also comprises particles which form an over-structure and have an average diameter of 0.1 to 50 μm, in particular 0.5 to 15 μm.

8. A substrate with a self-cleaning surface as defined in claim 5, where the coating comprises structure-forming particles with an average diameter of less than 100 nm, in particular less than 50 nm, and one or more layer-forming inorganic or organic materials in a weight ratio in the range from 100 : 1 to 1 : 2, in particular 20 : 1 to 1 : 1.

9. A substrate with a self-cleaning surface as defined in claim 1, where the substrate is glass or a plastic or an enamelled or glazed substrate.

10. A substrate as defined in claim 9, where the substrate is glass and the substrate coated according to the invention is substantially transparent.

11. A composition for the production of a substrate with at least one self-cleaning surface as defined in claim 1, where the composition comprises structure-forming particles with a particle diameter of less than 100 nm, in particular less than 50 nm, and at least 5 nm, and a layer-forming particulate or liquid material in a weight ratio of 100 : 1 to 1 : 2.

12. A composition as defined in claim 11, where the layer-forming material comprises as the main component one or more glass frits or/and one or more glass raw materials which, during firing, form a glass or vitreous structures with one another or/and with groups of the substrate or/and of the structure-forming particles which are capable of glass formation.

13. A composition as defined in claim 12, where the composition substantially comprises structure-forming particles and a layer-forming material, in particular, a particulate material which can be suspended in a liquid medium.

14. A composition as defined in claim 11, where the composition comprises structure-forming particles according to the invention with a particle diameter of less than 50 nm and at least 5 nm, in particular a silica, and, as the layer-forming material, one or more oxides from the series consisting of B_2O_3, Bi_2O_3, alkali metal oxides, zinc oxides and lead oxides or borates, silicates or phosphates or a glass frit which melts below 650 °C.

15. A composition as defined in claim 14, where the composition substantially comprises 1 to 10 wt.% pyrogenic silica (SiO_2) and 0.1 to 2 wt.% boric acid (B_2O_3), alkali metal or ammonium dihydrogen phosphate or di-alkali metal or

diammonium hydrogen phosphate or a glass frit which melts below 600 °C, in each case based on the composition, and a printing medium.

16. A process for the production of a substrate with at least one self-cleaning surface as defined in claim 1, comprising (i) coating of a surface of the substrate with a composition comprising structure-forming particles and an inorganic or organic layer-forming material, (ii) formation of a cohesive layer which fixes the structure-forming particles and adheres firmly to the substrate and (iii) hydrophobization of the structured surface formed, where the structure-forming particles have an average diameter of less than 10 nm, preferably less than 50 nm, and at least 5 nm.

17. A process as defined in claim 16, where a substrate from the series consisting of glass, ceramic, plastic and metal or a glazed or enamelled substrates, which can already have a micro-rough surface, is coated with a composition according to claim 11, which comprises a glass frit or a glass-forming raw material, the coated substrate is subjected to firing suitable for the formation of a firmly adhering cohesive layer, and the structured surface contained is coated with an organosilane, in particular fluoroorganosilane, and thereby hydrophobized.

18. A process as defined in claim 16, where the composition used to form the surface structure is applied in a liquid to paste-like consistency by means of a printing process, by spraying, brushing, pouring or dipping.

19. The use of a substrate with a self-cleaning surface as defined in claim 1 for the production of glass panes for vehicles and windows, construction glass, ceramic tiles, roof tiles, covers on photovoltaic solar cells, metal profiles and lacquered substrates.